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ABSTRACT

This collection of documents contains four papers: (1) "An Orientation Seminar for Prospective Wine Science and Viticulture Students" (A. V. Hood), which describes an innovation organized by staff involved in the external teaching of wine science and viticulture who sought to break down the barriers and concerns of prospective students contemplating enrolling in these programs in 1990; (2) "Electronic Mail Evaluated: A Case Study" (T. R. Frost and D. W. Roberts), which reports on the use of electronic mail to promote faculty-student communication in a database systems course; (3) "Workers Compensation for Distance Educators...A Few Problems and Possible Solutions" (B. C. Williamson), which explores issues affecting academic staff involved in off-campus or off-shore residential school situations; and (4) "Data Communications and Distance Education" (R. E. Moore), which recommends that the process of media selection for distance education be informed by learning theory. References are provided in each of the papers. (GL)

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This paper was originally presented at the ASPESA National Workshop, Computer Technology Serves Distance Education, in July 1988 and appeared in the Proceedings Papers afterwards. Permission to reprint the article here has been kindly given by ASPESA.

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EDITORIAL COMMENT

In the last issue (November 1989) it was announced that this next edition would be the first to truly represent the interests of all three members of Charles Sturt University in that there would be contributions from CSU-Riverina, CSU-Mitchell and CSU-Murray. To some extent the tyranny of distance has imposed itself however and this ninth issue consists of another four papers emanating from CSU-Riverina. It is hoped to redress this imbalance with number 10.

If a theme can be found running through this issue it is that of communication. The first paper describes an innovation organised by staff involved in the external teaching of Wine Science and Viticulture who sought to break down the barriers and concerns of prospective students contemplating enrolling in a Wine Science or Viticulture Program in 1990. The use of electronic mail to communicate with students is evaluated in the second paper. Of particular interest is the extent to which students communicated with their lecturer and colleagues using this medium. The system was apparently user-friendly and relatively inexpensive for the students.

The third paper, in contrast to the main theme, explores a number of workers compensation issues that academic staff involved in off-campus or off-shore residential school situations would do well to consider. Just when are you covered when conducting residential schools? Finally, the author of the fourth paper, 'Data Communications and Distance Education', urges us to think carefully about our choice of media when communicating with students. On what grounds should we select the media available to us? Is there a danger that we are too technology-driven sometimes in the use of instructional media?

We hope you enjoy this issue ...

David Roberts
Co-editor
CSU-Riverina

David Meacham
Co-editor
CSU-Mitchell

NOTES ON AUTHORS

Tim Frost is a lecturer in Computing in the School of Information Studies at Charles Sturt University-Riverina.

Andrew Hood, was until the end of 1989, a lecturer in Wine Science in the School of Agriculture at Charles Sturt University-Riverina.

Bob Moore is Principal Lecturer in Computing in the School of Information Studies at Charles Sturt University-Riverina.

David Roberts is Associate Head of the Division of External Studies at Charles Sturt University-Riverina.

Brian Williamson is a lecturer in Industrial Law in the School of Commerce at Charles Sturt University-Riverina and a Solicitor of the Supreme Court of NSW.

AN ORIENTATION SEMINAR FOR PROSPECTIVE WINE SCIENCE AND VITICULTURE STUDENTS

Andrew Hood

Introduction

Distance Educators have for years been concerned about the morality of enrolling students who are ill-prepared or ill-informed about what external study entails. It has been argued that measures need to be taken to properly inform prospective students of the demands that will be made upon them before they decide to enrol. If done effectively, this may reduce drop-out rates since the high-risk students will of their own accord have opted out prior to enrolling. With the imposition of HECS charges it is irresponsible to encourage grossly unprepared students to invest money in courses they have little likelihood of completing successfully. Increasingly students are likely to seek re-assurances that they have reasonable chances of success before committing themselves to study.

A number of initiatives have been considered or introduced elsewhere to try to overcome such problems. These include self-administered aptitude tests (R. Harrison, 1981), special counselling packages (J.E. Gough, 1980) and provisional enrolment arrangements (United Kingdom, Open University). Common to all such procedures is the desire to help students review their reasons for wanting to study based on the assumption that the better students understand what is required and the surer they are that they really want to pursue certain studies the more likely they are to succeed.

The innovation described here is a positive step to try to overcome the problems identified. Early feedback indicates it has been highly successful and may be worthy of serious consideration by other groups within the university. The progress of students involved will be carefully monitored over the next few years.

The Innovation

In August 1989, an orientation seminar was conducted to provided information on CSU Wine Science and Viticulture courses to persons intending or considering enrolment in 1990. As far as is known, this was the first time that such a seminar has been held at this institution, so the purpose of this paper is to describe what was done so that others may consider running similar functions for other courses in the future.

The orientation seminar was initially conceived early in 1989 as academic staff again contemplated, firstly, the difficulties of disseminating course related information to new enrollees in the Wine Science and Viticulture courses (both presented predominantly externally), and secondly, the seemingly inevitable loss of new students as they discovered that distance education was not what they expected.

It was hoped that, by informing prospective students about the courses **before they applied for admission**, that:

- overall student performance would be enhanced through eventual enrollees being better informed of all aspects of study in our courses,
- the time and expenditure wasted in enrolling students who drop out early in their courses would be reduced by unsuitable candidates being discouraged from applying for entry following realistic description of the demands and pressures of study,
- administrative efficiency would be improved by being able to address common problems and issues with a group of people rather than individuals, and also by informing people of the documentation required for efficient processing of their enrolment applications,
- relations between staff and prospective new students would be enhanced by contact during the seminar,
- prospective students would be able to positively identify with the University, its facilities and the location thus creating a sense of 'belonging' (a form of acculturation).

The seminar was held at the end of August 1989, before the demanding September residential school period and to provide prospective students a reasonable period between the seminar and the deadline for course applications on 1 November. Advertisements and press releases for the seminar were placed in industry journals and newspaper wine columns during July.

Persons attending the seminar were charged $50.00 to cover the costs of the seminar (advertising and written materials), a lunch and evening dinner. Arrangements and payment for travel to Wagga Wagga and overnight accommodation were left to individual students.

The program ran over one and a half days, beginning mid-morning on the first day, with the main items and activities being:

Welcome and introduction (staff introductions, overview of the Viticulture and Wine Science courses, modes of study, articulation between the courses, the Ron Potter Centre commercial enterprises, employment opportunities for graduates) 30 minutes.

Course enrolment procedures (application procedures, academic and industry requirements, subject exemptions) 60 minutes.

Tour of the winery, vineyard and nursery 90 minutes.

Course structures (course design, major subject sequences and prerequisite relationships, progression requirements) 30 minutes.

Description of specific subject areas (basic sciences, wine production, wine appraisal, microbiology, viticulture, engineering, excursions and practical experience) 75 minutes.

External studies (general description, mail packages, residential schools, exams and assignments, contact with lecturers, text books) 30 minutes.

Study management (study time requirements, successful study techniques, common study difficulties, student services) 30 minutes.

Financial consideration (fees, residential school and excursion costs, higher education charge, sources of assistance) 30 minutes.

Campus tour (library, student accommodation, laboratories, etc.) 60 minutes.

Higher degree and research opportunities 15 minutes.

Wherever possible, topics were presented by the most qualified persons in the University. For instance, senior staff from Student Administration and External Studies spoke, presented written material and answered questions on their respective topics. Without exception, staff were happy for the opportunity to be involved and imparted their information professionally and effectively. Wine Science and Viticulture lecturers were present throughout to assist with course-specific information and comment. All aspects of the program, including the range of topics covered and the time devoted to different areas, ran smoothly.

The general tone of the seminar was indeed to encourage participants to consider enrolment in CSU-Riverina courses, but at the same time the difficulties and problems associated with distance education were described factually and realistically. It was felt that it was just as important to assist prospective 'drop-outs' to decide **not** to enrol as it was to encourage people with better prospects to join the University.

The seminar was attended by about 30 people, of whom 19 have since applied to enrol in either Wine Science or Viticulture for 1990. The progress of these students will be followed carefully in the hope of verifying the benefits of the orientation seminar in terms of better than normal student retention and academic performance, and the results will hopefully be the subject of a further Occasional Paper.

Even without an objective measure of the value of the seminar, it was very obvious that those who attended enjoyed the opportunity to meet university staff, inspect the facilities and be given detailed and realistic information on the Wine Science and Viticulture courses at CSU. For this reason, we have already decided to mount a similar seminar at the same time in 1990. The general aims and format will remain unchanged, but the following improvements and changes will probably be introduced:

- Considering the numerous potential benefits of the orientation seminar to the University, participants should only be charged a nominal fee.
- Student Administration will be asked to send a leaflet describing the seminar to all persons enquiring about the Wine Science or Viticulture course.
- A kit containing the written information supplied to participants will be available to prospective students unable to attend the seminar.
- In the longer term it may become feasible for a small team of staff to present condensed versions of the seminar in other geographic areas.

Conclusion

In summary, staff believe that orientation seminars for prospective students before they apply for entry, have a number of significant benefits for both the participants and the University. Wine Science and Viticulture staff intend to run similar orientation courses in the future and would appreciate any suggestions or comments which may help to improve the seminar. In addition staff would be happy to discuss their experiences in more detail with other University staff considering similar seminars in their own areas.

References

Harrison, R. *Self-Administered Aptitude Tests*. U.K.O.U. Internal Paper, May 1981.

Gough, J.E. *Distance Education, Mature Age, Open Entry and Counselling*, Occasional Papers - Deakin University, 1980, pp. 7-14.

ELECTRONIC MAIL EVALUATED - A CASE STUDY

Tim Frost and David Roberts

Preamble

Electronic mail as a technique to help reduce feelings of isolation experienced by external students and as a means of increasing the effectiveness of communication between student/lecturer and student/student has been described by a number of writers. (Scriven, B., 1988, Gledhill, V.X. and Dudley, C.P., 1988, Frost, T.R., 1989, Vivian, V., 1986, Küffner, H., 1984, Atkinson, R., 1988). Many higher education institutions have trialled electronic mail systems (EMAIL) yet few have persisted. At Charles Sturt University-Riverina EMAIL has been operating within the Graduate Diploma in Computing Applications course for over four years (six student intakes). This paper reports on an evaluation of the use of EMAIL in one of the course's subjects DTA4114: Database Systems during Autumn Semester 1989 and concludes with a set of recommendations for improving its effectiveness and extending the adoption of EMAIL technology to other teaching areas within the University. This evaluation is a sequel to the descriptive paper that appeared in ASPESA Papers No. 8 (1989) entitled 'Using Computer Based Communications to Reduce the Difficulties of Distance Education'. Readers interested in a detailed explanation of the rationale behind the introduction of EMAIL and how it is used in DTA4114 are referred to this earlier paper. A precis follows.

Charles Sturt University-Riverina offers a two year, external Post Graduate Diploma in Computer Applications consisting of two subjects each semester for four semesters. The use of electronic communications with minimal residential school attendance requirements is a fundamental basis of the course design. Students are required to attend an initial course based residential school of five days, at which they receive instruction and demonstrations on the use of electronic communications (via Telecom's AUSTPAC service, into which one of the University's VAX computers is connected) as well as an introduction to their first two subjects. The residential school is designed for students with no prior computing experience although increasingly students do have some previous computer use exposure.

As well as instructional content, the residential school gives students the opportunity to meet staff and fellow students. This is significant for future communications, as it is often commented that having previously met your correspondent makes subsequent non face-to-face communications easier.

The format of each of the subjects in the Graduate Diploma is that of a 'traditional' printed mail package, which contains the Subject Outline (objectives, texts, references, assignments, due dates, etc), and the associated Notes and Readings. What is different however, is that all students are **required** to log on to the University's VAX twice a week during semester time to check for Electronic Mail messages and to send their own messages and assignments. In this way, students and staff are potentially only a matter of hours apart, depending on how frequently people log in to the central computer to check for messages.

Apart from the initial course-based residential school the only other planned meeting of the students and staff is the final residential school at the end of the fourth semester, at which the students present and defend their major project - a computerised real life application.

Evaluation Model

In conducting this evaluation it was considered appropriate to investigate all phases of the use of EMAIL. Were students properly prepared to use EMAIL? Were the procedures used in the transmission of messages and assignments effective? Did the lecturer and students consider the use of EMAIL had been helpful? An evaluation model designed to address such an holistic view of innovation is the CIPP Model. (Stufflebeam, D.L. and Guba, E.G., 1971). CIPP is an acronym for four stages of evaluation, namely context, input, process and product. Since this evaluation is presented using these four stages brief definitions are provided.

Context evaluation involves analysing the significant elements of an educational environment. Under context evaluation one would expect to address such questions as why was the use of EMAIL considered to meet an educational need, did the lecturer and students have the background to participate effectively in EMAIL?

Input evaluation provides information regarding how to employ the resources to achieve the program objectives. Here one might ask whether the University provided the technology to allow the effective use of EMAIL; whether sufficient resources were in place to instruct students on the use of EMAIL during the Residential School.

Process evaluation occurs once the instructional program is operating. Its purpose is to describe procedural events and activities so that any deficits in the implementation can be discerned. Under this heading one considers what problems students and the lecturer experienced in actually using EMAIL.

Product evaluation attempts to measure and interpret the attainments arising from an educational innovation. In this case it is pertinent to ascertain student attitudes to EMAIL after the completion of DTA4114 and any other outcomes. What advantages/disadvantages did the lecturer/students perceive in using EMAIL rather than some other more traditional communication system? Were the objectives effectively accomplished?

Table 1 places the four stages of evaluation that make up the CIPP model into a timeframe.

Context Evaluation	Input Evaluation	Process Evaluation	Product Evaluation
Pre-semester	Pre-semester and at the Residential School prior to commencement of the course	During the semester	After the semester
Pre-February 1989	February 1989	February to July 1989	Post July 1989

Table 1 - Timeframe for the Evaluation of EMAIL

Methodology

Evaluation involves collecting valid data which may be used to make judgements about a program. Such judgements should result in recommendations for improvements.

The data for this evaluation was obtained from three sources; the DTA4114 lecturer, who was involved in many discussions about the use of EMAIL; a student questionnaire completed after the subject had finished and the record of all EMAIL exchanged between the lecturer and the students.

The student questionnaire was forwarded via Electronic Mail (plus a hard copy with a returned assignment through Australia Post) to the 17 students undertaking DTA4114 before the end of the semester. Full responses were received from 13 students - a response rate of 76.5%. Four students declined to reply despite several reminders sent via EMAIL. Students were required to return their questionnaires to the Division of External Studies (not the lecturer) and to remain anonymous. Of the 17 students who attempted DTA4114, 15 achieved a pass or higher. It seems likely, but by no means certain, that the two who failed the subject were non-respondents.

One of the advantages of using EMAIL is that a permanent record of all communications between students and lecturer can be stored in the computer and called up whenever required. Access to such data is invaluable when determining the number, length and frequency of mail messages transmitted during the semester. Analysis also provides an insight into the topics covered and the extent to which two-way communication (question and answer) eventuated.

Context Evaluation

As described earlier, this part of an evaluation seeks to examine the context in which an innovation occurs. In this study the context was a group of 17 students enrolled in DTA4114, their lecturer and the rationale for making EMAIL a compulsory component of the subject.

The 17 students had already successfully completed the same four subjects in the Graduate Diploma in Computer Applications:

DTA4024: Introduction to Information Systems
DTA4034: Information Analysis and Design
DTA4314: Foundations of Programming
DTA4324: Advanced Programming Techniques

It can be safely assumed, therefore, that the students shared a common knowledge base. Furthermore, the entire cohort had attended a residential school twelve months earlier at which they were given approximately six hours practical introduction to the use of EMAIL by the lecturer who was later to be their lecturer for DTA4114. The lecturer is convinced of the necessity for hands on experience at the initial residential school and considers that a reduced effectiveness of EMAIL usage would probably occur without this prior exposure. It is believed that because the students met at the residential school they were more likely to use EMAIL to contact each other later as they progressed through their subjects.

Twelve months elapsed between the February residential school at which students first became conversant with EMAIL and the commencement of DTA4114. The twelve months gap between initial contact with EMAIL and the start of semester was not a problem however. Very few practical difficulties were experienced by the students no doubt partly due to the fact that they had been encouraged to use EMAIL as a voluntary form of communication while studying the earlier subjects in their first two semesters.

The lecturer for DTA4114 first introduced EMAIL as a compulsory component of the external subject in Spring 1988. Prior to this, the lecturer had had extensive experience with EMAIL both within the computing industry since 1973 and as used in both internal teaching (1982 on) and external teaching (1985 on) at Charles Sturt University-Riverina (formerly Riverina-Murray Institute of Higher Education).

Part of the rationale for requiring students enrolled in DTA4114 to communicate by EMAIL and to forward assignments one and four by this mode stemmed from the concern that staff held about the graduate diploma being of a practical orientation. It was argued the best way for students to appreciate the potential for EMAIL was by immersing them in a situation where EMAIL constituted an essential part of the learning process. Apart from ensuring students acquired the practical skills of using electronic mail, it was considered access would reduce the sense of isolation felt by students from University and their colleagues by providing the means for more frequent and effective communication.

To summarise the context, there appears little doubt the reasons for requiring the use of EMAIL in DTA4114 were educationally valid and potentially helpful in the satisfaction of certain needs of external students. The knowledge, commitment and experience of the lecturer was more than adequate while the students had been instructed at the residential school in the use of EMAIL.

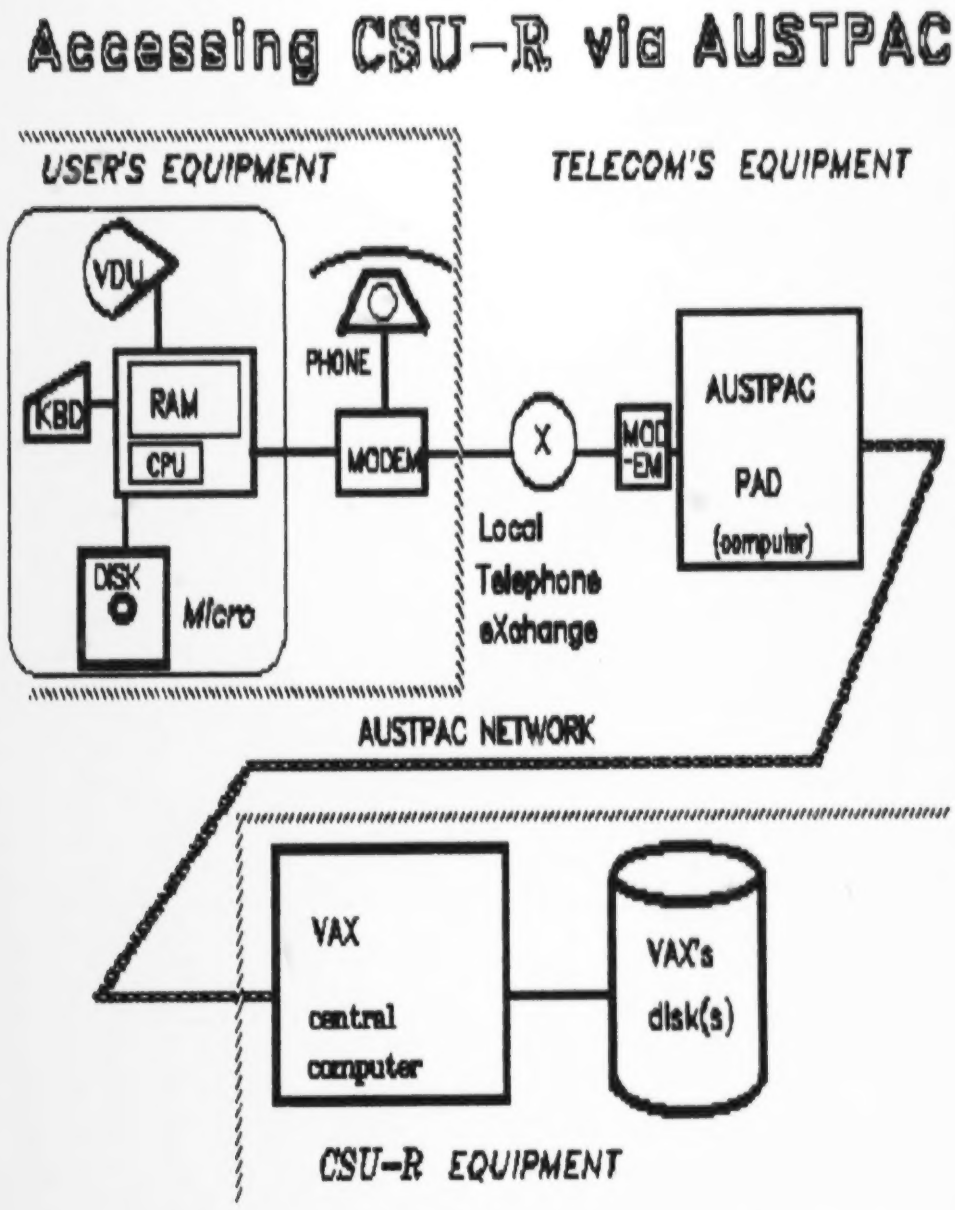
Input Evaluation

Input evaluation seeks to investigate whether the resource inputs were sufficient to allow the innovation to succeed. In this case it is necessary to ask whether the resources provided enabled the achievement of the three objectives for which EMAIL had been introduced, namely:

- to reduce the student sense of isolation,
- to increase the effectiveness of communications,
- to give students the opportunity to demonstrate their practical knowledge of using EMAIL.

For these objectives to be realised it was necessary that the technology be functioning effectively and at an acceptable cost. This part of the evaluation, therefore, examines the EMAIL system itself. Figure 1 shows the equipment components and inter-connections of the system diagrammatically.

FIGURE 1

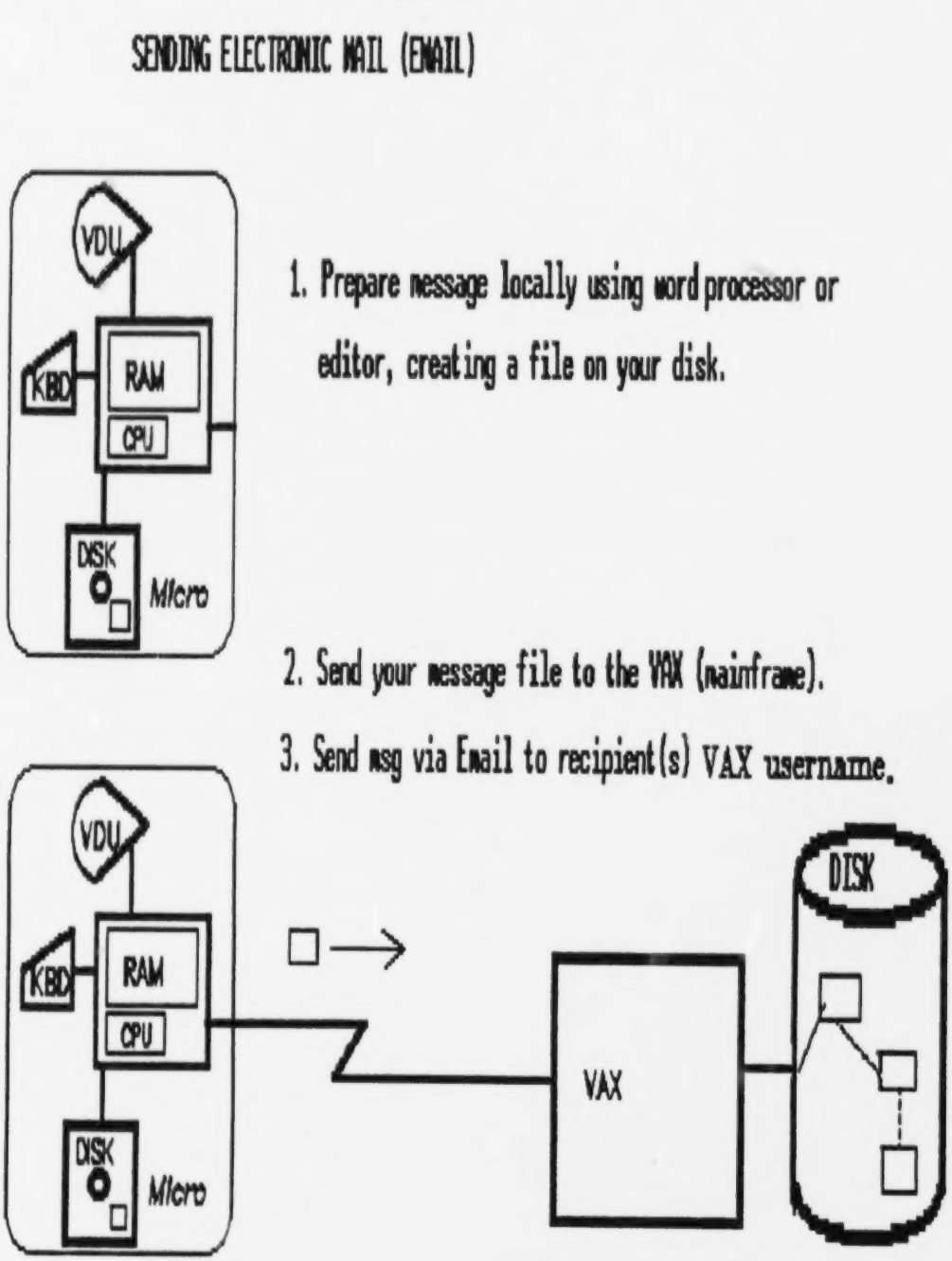


As you can see from Figure 1, the student's microcomputer can be linked to Telecom's Austpac service, which in turn is linked to the University's central VAX computer. Whilst initially appearing quite involved, the connection process is easily learnt, and takes less than 30 seconds to accomplish each time access to the VAX is required.

Students normally prepare their EMAIL message for sending (to the lecturer/other students) locally on their microcomputer, before connecting to the central VAX computer.

After connection, the EMAIL message is transferred quickly (in seconds/minutes) to the VAX, on which it is sent via the EMAIL facility to the VAX username of the intended recipients, as shown diagramatically in Figure 2.

FIGURE 2

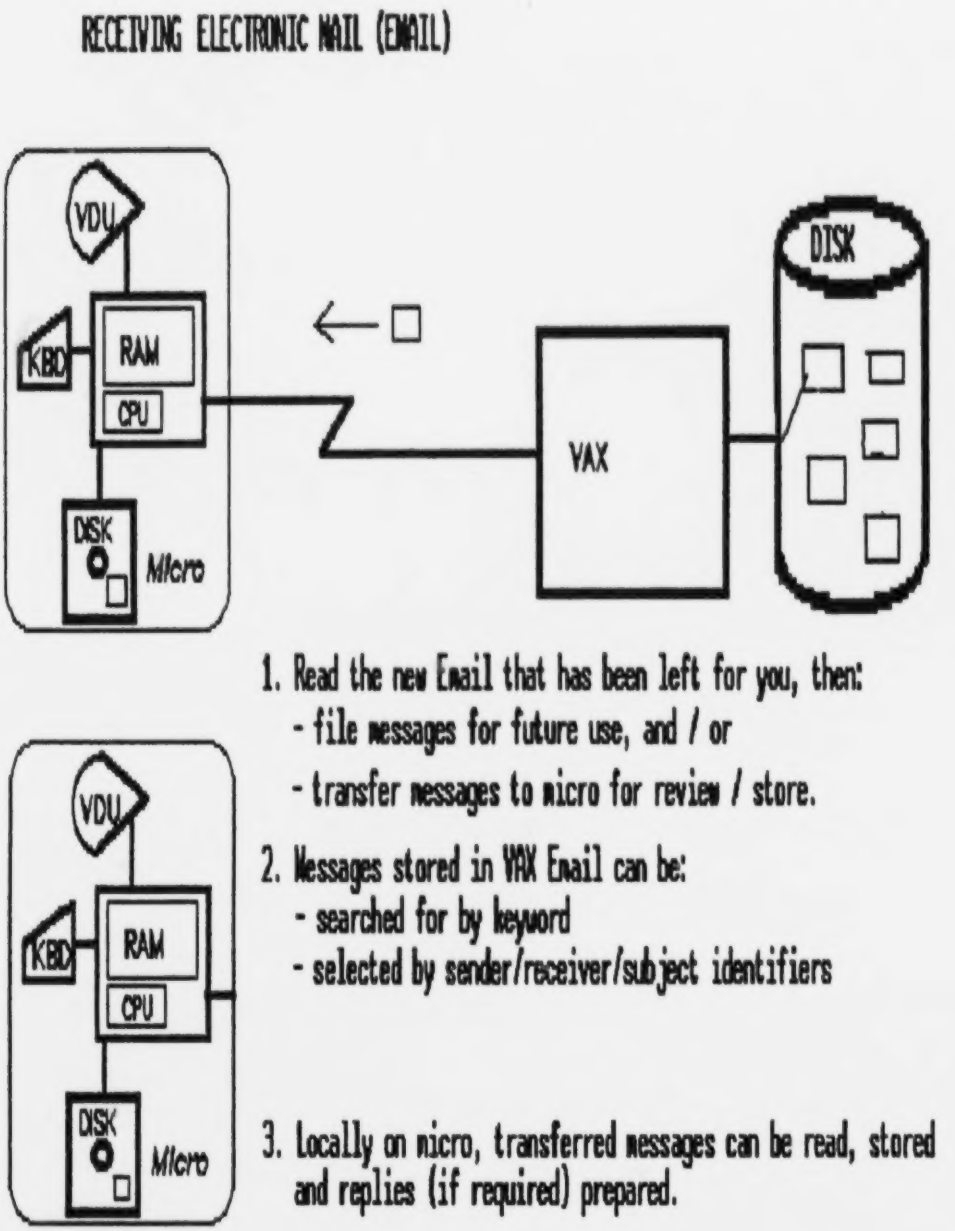


The EMAIL facility stores all messages sent to a particular person on the central VAX to await collection. Each user participating in the EMAIL exchange facility must periodically (suggested daily) access the central VAX to determine whether or not 'new mail' has arrived for them.

As a user logs in to the VAX they are told how many messages await them. Thus if there are none, it takes only one or two minutes to complete the exercise of checking and then logging off (disconnecting from the VAX).

If messages are waiting, they can be read whilst connected to the VAX, and/or transferred to the users own microcomputer, as shown in Figure 3.

FIGURE 3


RECEIVING ELECTRONIC MAIL (EMAIL)
VDU
KBD
RAM
CPU
DISK
Micro
VAX
DISK
1. Read the new Email that has been left for you, then:
- file messages for future use, and / or
- transfer messages to micro for review / store.
2. Messages stored in VAX Email can be:
- searched for by keyword
- selected by sender/receiver/subject identifiers
3. Locally on micro, transferred messages can be read, stored and replies (if required) prepared.

Each student in the Graduate Diploma is required to have their own micro-computer or easy access to a modem and the appropriate software to allow that microcomputer to communicate. No prescription as to manufacturer or model is made, only that it must be able to communicate (via Telecom's AUSTPAC service, or direct STD dial) to the University's VAX central computer.

Students selected a wide range of microcomputers and modems as illustrated below.

Student Number	Microcomputer	Modem
1	Amiga 1000	Tandy Modem 300 Baud
2	Amstrad 1640 (IBM Comp.)	Avtek Mini Modem II
3	Microbee CPM 128K	Avtek Mini Modem II
4	Ultra XT (IBM Comp.)	Le Modem (internal modem)
5	Toshiba 3100 (IBM Comp.)	Netcomm Portable modem
6	Micropro (IBM Comp.)	Not known
7	8088 Turbo 640K (IBM Comp.)	Avtek MEGA modem 12
8	Amstrad SD 1512 (IBM Comp.)	Netcomm 3 + 12
9	IBM PC -AT	Bit Blitzer 12E modem
10	Apricot Micro	Sendata modem
11	Apple IIE	Autolie modem
12	Atari 1040	Sendata quad intelligent modem
13	IBM XT Clone	300 Baud Hayes Compatible modem

Table 2 - Microcomputers and modems used by students enrolled in DTA4114, Autumn 1989

Depending on the features and sophistication of the equipment chosen by the student, a typical setup cost of $1000-2000 should be expected, but this can easily be defrayed against the cost of attending several extra residential schools for the course. An added bonus is that students become competent in the use of their microcomputers during the course duration, over and above the mastery of course content.

Only two of the 13 students reported any malfunctioning of the technology; one experienced a damaged monitor, the other, difficulty with the scroll lock system.

There is no reason to believe these problems were anything more than normal wear and tear.

To make EMAIL operative, the University has provided all the necessary central resources for the use of students and staff. Currently the central system is a VAX 8200, which has many local terminals for staff and internal on-campus students, and a connection (at 9600 BPS) to Telecom's AUSTPAC service that can support 15 concurrent users. Additionally, there are three direct dial modems available on the VAX, enabling students to bypass AUSTPAC should the University's 15 users limit be fully utilised (which is rare) and for local phone area users.

This system appeared to work well although four students reported occasional difficulties. The reported problems were followed up with the result that the concerns were identified as being either operator error, ignorance on the part of students or technical problems with the VAX8200. None of the reported difficulties could be attributed to Telecom's AUSTPAC service.

Each student was allocated a unique Username on the VAX, including an amount of disk storage space. Each username was so established that privacy was enforced, in that no other user (excepting the system manager) could access a student's files. Nor could a student relax this constraint. Thus each student could confidently work independently on the central computer when necessary. The standard VAX electronic mail facility was used between students and lecturers, and between students.

To simplify the student's method of access, and to remove the need to become a Telecom AUSTPAC account holder, with associated setup and maintenance charges, the University's VAX accepts reverse charge communications from the microcomputers of VALID students. To achieve this control, special access and accounting software has been developed, to check (for each AUSTPAC user logging in) that the user is acceptable and that they have sufficient communications CREDIT (in minutes) available. If the user is not valid, or does not have any time credit remaining, they are suitably informed and automatically disconnected.

As the students use the central computer via AUSTPAC, their usage is recorded and debited against the amount of communication time credit remaining. AUSTPAC charges for all students are billed to the University, which in turn recovers the cost from the users (currently at a recovery rate of $8 per hour, which compares favourably with peak time STD of around $25 per hour from Sydney, for example).

The students were provided with an amount of 'free' AUSTPAC usage time for each subject, with the amount varying between five and ten hours per subject (larger amounts for earlier subjects). If a student required additional access time, they sent a cheque for the appropriate amount, which was then credited to their AUSTPAC use account.

In some subjects, students needed to use more than their 'free' allocation (the amount varying with the ability of the student and the features of their microcomputer), but again this additional cost has to be weighed against the reduced need for residential schools, and communication responsiveness with lecturers.

Very few complaints have been received from students regarding this method of costing. It is a particularly equitable system since costs are not distance related. A student using EMAIL in Darwin pays the same amount as a student in Canberra. Additional costs will be incurred, however, if students reside overseas.

The DTA4114 lecturer has access to EMAIL via facilities at the workplace (provided by the University) and from home (provided by himself). In his university office, the lecturer has an IBM compatible microcomputer (mono screen, 30MB hard disk) but must share five access lines to the central VAX computer with about 12 other users. No modem is necessary as a 'direct' connection between the computers is effected.

At home, the lecturer has an IBM compatible microcomputer (CGA colour, 20MB hard disk) with an inbuilt Hayes compatible modem that operates up to 2400 baud). A local phone call cost is required for each session on the central computer. Having access from home allows, at minimum inconvenience, the lecturer to send/respond to EMAIL during evening and weekend periods which is very helpful for external students. On both computers the VT Kermit communications software package is used.

To conclude the Input evaluation section it is necessary to return to the three objectives for EMAIL listed at the start of this section. Undoubtedly the equipment was sound and the costs not considered too high since very few concerns were expressed by the lecturer and/or students with regard to the functioning of the technology. Students were provided with a valuable opportunity to demonstrate their practical knowledge and understanding of EMAIL. The extent to which communication effectiveness and the reduction of a sense of isolation were realised will need to be addressed in greater detail however in the next section - process evaluation.

Process Evaluation

This component of the CIPP Evaluation model examines what actually happened during the semester itself. How much and what kind of use was made of EMAIL? What advantages/disadvantages did the lecturer and the students report? How can the EMAIL system be improved?

Items 5, 6 and 7 of the student questionnaire were designed to determine frequency of student use of EMAIL in the subject for the semester. The results are shown in table 3 below:

	Item 5		Item 6		Item 7	
No. of Messages	Students	Messages Sent	Students	Messages Sent	Students	Messages Sent
<5	2	4	8	16	8	16
6-10	7	56	2	16	4	31
11-15	2	26	2	26	1	13
16-20	0	0	1	18	0	0
>20	2	42	0	0	0	0
Totals	13	128	13	76	13	61

5 How many times did you use EMAIL to send messages to your DTA4114 lecturer this semester?
6 How many times did you use EMAIL to send messages to other DTA4114 students? (i.e. you initiated the exchange)
7 How many times did you respond to an EMAIL message initiated by another DTA4114 student?

Table 3 - Number of EMAIL messages sent by thirteen DTA4114 students in one semester

With the data in columns 5, 6 and 7 it is possible to roughly estimate the total number of EMAIL messages sent by students by multiplying the number of students in each category by the mid-point of the range. Using this method the 13 students sent approximately 265 EMAIL messages, an average of 20 messages per student per semester. Anyone involved in distance education will know that this is an extraordinarily high level of communication rarely, if ever, achieved using more conventional forms of communication such as telephone, Australia Post or facsimile. If education is, inter alia, about communicating then these statistics are most heartening.

Reasons for student communications were sought in items 8 and 9. The findings are presented as table 4. Overall four matters interested the students; course content, assessment, how to use EMAIL and 'social and general matters'. The last is imprecise but possibly reflects the need of external students to seek support from colleagues. Nine of the 13 participants initiated conversation in this area.

Topics discussed	No. of students initiating discussions
Contents of Subject Outline	2
Contents of Notes	2
Contents of Readings	1
Contents of Database Example Project Book	1
Contents of Textbook	1
Assessment requirements	7
Assessment results	3
Data communications usage	3
Facilities (AUSTPAC/VAX)	2
Social and general matters	9
Did not initiate any discussions	4

Table 4 - Topics of discussion initiated by thirteen students enrolled in DTA4114

Another interesting observation to emerge from table 4 is that four of the 13 students chose not to initiate any conversations at all using EMAIL. In fact five students claimed no students initiated discussions with them which indicates a group of 8 students must have used EMAIL extensively whereas a smaller group of 4 or 5 made minimal use of the facility. It would appear that there were two distinct groups present - those who relished the opportunities of increased communication and those who were unenthused. This tentative finding begs further investigation.

So far no mention has been made of the lecturer's use of EMAIL. We know from table 3, that according to the perceptions of the 13 students who returned their questionnaires, an estimated total of 128 messages were sent to the lecturer.

However, a double check of the number of messages received by the lecturer and recorded on his computer indicates students **underestimated** the number of messages they sent. Of the 17 students enrolled we have no way of telling which 13 responded to the questionnaire, so it is not possible to compare individual perceptions of the number of messages sent with the data actually recorded on the computer.

Details of messages sent to the lecturer are shown below.

Student	Data from Computer (17 students)		Data from Questionnaire (13 students)
1	29	High Users	Refer to Table 3
2	24		
3	23		
4	20		
5	17	Moderate Users	
6	15		
7	11		
8	10		
9	9		
10	9		
11	9		
12	9		
13	8		
14	5	Low Users	
15	4		
16	4		
17	2		
Total messages		208	Total messages 128
Average per student		12.2	Average per student 9.8

Table 5 - Messages sent by students to their lecturer. A comparison of questionnaire data with computer data.

Again it is interesting to note the marked difference in use of this facility, although it is not possible to do more than hypothesise the reasons for such variance. Four students sent 20 or more messages whereas another group of four used EMAIL five or fewer times.

Using the computer, it was easy to examine the content of all the EMAIL messages forwarded to students from the lecturer. For this group of 17 students a total of 292 messages were sent - an average of 17.2 messages per student. The messages have been classified under six headings. Headings 1 and 2 were general messages broadcast to the whole group whereas headings 3-6 were individual. The six classifications and their frequency of use are shown in table 6.

Classification	No. of messages
1. General information and encouragement notices sent to whole cohort	(20 x 17)
2. General assignment feedback notices sent to whole cohort	(5 x 17)
3. Encouragement notices sent to individuals	5
4. Assignment feedback notices sent to individuals	33
5. Administration type notices about subjects/courses to individuals	26
6. Individual responses to student questions	203
Total messages sent by lecturer	292
Total messages received by student cohort*	692
* One general information or feedback notice sent to the whole cohort multiplied by number of students in the cohort (i.e. 17)	

Table 6 - Analysis of EMAIL messages sent by lecturer

Tables 5 and 6 provide compelling evidence of the desire of students in this subject to communicate with the lecturer. That so much communication occurred must reflect the user-friendliness of EMAIL. It seems extremely unlikely that the subject would have evoked so much communication had only the normal traditional methods been available. The question this result raises is the extent to which external students would communicate with their lecturers had they access to EMAIL in other subjects? The authors suggest that using only the limited communication channels presently available is a deterrent to study, motivation and success. EMAIL is the communication system most likely to unlock the plethora of questions and queries external students would wish to ask if only the means was at their disposal.

Questionnaire items were also included that sought to ascertain whether the use of EMAIL in any way influenced the teaching-learning process. Did the ease of communication effect student study habits? Did ready access to EMAIL impact on the way the lecturer prepared and delivered the instructional materials? Did the electronic receipt of 'paperless' assignments change the way the lecturer assessed the students? In other words, was the use of this technology influencing the educational process itself and if so, how and to what extent? Apart from student responses to the questionnaire it was also possible to interview the lecturer to seek his perceptions.

Item 19 asked, "Has the use of EMAIL changed the way you go about approaching your study? Explain" Eleven of the thirteen students replied in the affirmative while two did not believe their approach to study had been influenced. The changes attributed to the use of EMAIL varied (Table 7).

How approach to study was changed	No. of students
Can leave assignment to the last minute and be sure it will arrive on time.	4
EMAIL forced me to learn and use new skills (word processing and phrasing my questions better)	3
Easier access to lecturer meant more interaction and greater help	2
Assignment returned so quickly I could use it in preparing my next assignment	1
PC at work is superior to mine so I now study at work mostly	1
EMAIL less busy after 7.00 pm so I usually work after 7.00 pm	1
EMAIL has forced me to plan my use of time better.	1

Table 7 - Changes to study approach attributed to EMAIL

Table 7 is self-explanatory. It is interesting to note that four of the students relished the extra time available for assignment submission and the reliability of the method of submission. Three acknowledged they had been forced to learn new skills as a result of using EMAIL which of course was a stated aim for this subject. Perhaps surprisingly, only two students mentioned easier access to the lecturer as being a means whereby their approach to study had changed. On the whole it is fair to say that EMAIL did influence study habits in that students enjoyed faster and easier communication with their lecturer. Valuable as all this is, EMAIL really is only a mechanism for greater communication with perhaps the spin-off that improved communication enhances the level of students motivation. No students reported going about the actual learning process itself differently.

Item 20 asked students whether the use of EMAIL changed the way the lecturer prepared the instructional material. The purpose for asking this reflected the concern expressed by some educationalists that such an easy and rapid communication system might result in an over-reliance on the communication technology at the expense of the more conventional written materials normally supplied to students studying at a distance. The lecturer assures that this was not the case. The DTA4114 subject materials continue to be comprehensive and consist of:

• Subject Outline	(19 pages)
• Notes	(105 pages)
• Example Database Project	(115 pages)
• Datatrieve Language Handbook	(188 pages)
Total	(427 pages)

The lecturer stressed the importance of retaining the print medium since he believed students still preferred to study from books. Books, he claimed, are more transportable, easier to follow, available for students to scribble comments in and a valuable means of revision and later reference. There is also a sense of ownership in having a full set of instructional materials. However, it was still felt necessary to ask students their opinions.

Five students felt the use of EMAIL had effected the way the lecturer had prepared his materials, five said 'No', two 'did not know' and one did not respond. When asked to elaborate, the only students who chose to do so were the five who had replied in the affirmative. Their answers are listed below:

- Depends on the lecturer. Allows greater interaction between lecturer and student - this could be reflected in the materials.
- The medium is different, therefore the presentation is modified by the lecturer.
- Lecturer can rectify any problems in material very quickly/easily.
- Some materials are prepared specifically to be sent EMAIL, e.g. a sample database design.
- Lecturer may not put some things in print if he can use EMAIL.

When confronted with these responses the lecturer admitted there was some truth in the students' comments but added that these perceptions may also have been developed while studying earlier subjects in the course. Whereas it was agreed that the presentation of instructional materials was susceptible to change by using EMAIL it was also agreed that full and proper use of the print medium was as essential as ever. There was no indication that DTA4114 print materials were in any way inferior or less comprehensive than would be expected in a subject not using EMAIL. The use of EMAIL should not be perceived as an excuse for poor quality print materials. This was not the case in DTA4114.

Students were also asked whether they thought the use of EMAIL changed the way the lecturer assessed students (item 21). Responses were seven 'No', five 'Yes' and one 'did not know'. One student, who responded in the negative, claimed the medium should not influence assessment in any way, but four of the five 'Yes' students had different views. Two of these students felt that EMAIL assessment was helpful because return rates were so much faster. One student commented that the use of EMAIL probably encouraged greater use of automatic marking systems. This could be debated at length and is not an argument peculiar to the use of EMAIL. Suffice it to say, that in DTA4114 proper regard is given to the most suitable type and form of assessment. Of the four assignments students must complete in DTA4114 two are submitted electronically.

The only student to express a dislike for the 'paperless' assignment was one concerned about the presentation of work. This student complained the formatting limitations applied by the lecturer to simplify the 'on screen' marking process did not allow for individual expression in presentation. This is an interesting point since all students, like it or not, must use the format provided. In this student's case he or she resented the loss of individual expression because of the way the technology was being used. It is of course a moot point whether marks should be won or lost because of presentation. Some lecturers assign marks for presentation and tell their students this while others claim that it is the

content only that counts. It is generally accepted, that whether marks are directly awarded for presentation or not, lecturer attitude to a well presented piece of work is more positive and that well presented work is likely to score higher than the same material poorly presented. (Bate, D and Sharpe, P., 1983; Clanchy, J. and Ballard, B, 1981; Strunk, W. and White, E.B., 1979). This student obviously felt the opportunity to shine in presentation has been denied and that this was unfair. Poor presenters, on the other hand, would surely welcome the levelling effect the paperless assignment provides.

To conclude this section the main findings of the process evaluation are listed below:

- Two distinct groups of students were recognised. A large group that used EMAIL extensively to initiate communications with the lecturer and fellow students and a small group that only used EMAIL when required.
- The lecturer also used EMAIL extensively in sending individual and group messages to students.
- The use of EMAIL was shown to have some effect on the study habits of students.
- Instructional materials (print based) may be susceptible to modification if accompanied by EMAIL.
- Most students felt EMAIL did not influence the way the lecturer assessed. The few who believed the lecturer was influenced could not agree whether the influence was a good thing or not.

Product Evaluation

Product evaluation focuses on outcomes. At the completion of DTA4114 were the educational objectives of using EMAIL achieved? Were the students and lecturer satisfied? What attitudes had changed? What were the advantages and disadvantages of using EMAIL? Heavy reliance for answers to such questions has been placed on student responses to the questionnaire.

Item 10 asked what the advantages/disadvantages would be of studying DTA4114 if EMAIL had not been available. Apart from the one student who had earlier bemoaned the formatting limitations, all students believed inaccessibility to EMAIL to be disadvantageous. The disadvantages are listed as table 8 below.

Disadvantages of no EMAIL	No. of students
. Poor access to lecturer	9
. Slower response and feedback from lecturer	5
. Unable to work on assignment until actual submission time	2
. No certainty assignments arrive safely and on time	2
. Unable to communicate so readily with other students	1

Table 8 - Disadvantages for students in not having EMAIL for DTA4114

Of particular interest in table 8 is the emphasis given to the value of student-lecturer dialogue (14 statements) in comparison to student-student dialogue (one statement). EMAIL, not unexpectedly was regarded as being of great communication value.

In reply to the question, "Would you prefer, in this Graduate Diploma Course, greater staff use of EMAIL in other subjects?" the score was 'Yes'-9 and 'No'-4. By cross-checking, it was found the affirmative and negative responses given to this question correlated closely with the large group identified earlier that made extensive use of EMAIL to initiate contacts and the smaller group that declined to do so unless unable to avoid such contact. This is further evidence of the existence of two distinct types of users of EMAIL in this particular cohort.

Of the four students who had responded in the negative, three felt use of EMAIL in other subjects was already adequate. The fourth, who professed to having trouble familiarising with EMAIL, preferred to remain with hard copy assignments since these felt so much more 'secure'.

The nine students supporting greater use of EMAIL in other subjects proffered the following reasons:

- The better contact leads to enhanced understanding between students and the lecturer (6 students)
- Communication is faster (1 student)
- Communication is safer (1 student)
- Lecturer can respond to a single inquiry from a student by sending the answer to the whole group (1 student)

Overall, the majority of students would appreciate more comprehensive use of EMAIL in other Graduate Diploma subjects.

When asked whether they preferred to send assignments EMAIL rather than by postage or some other means, nine students said 'Yes', three 'No' and one was not sure. The undecided student simply stated that some assignments were not suitable for transmission by EMAIL. Two students who responded negatively felt EMAIL was unsuitable for longer assignments but did not say why they felt this. On the affirmative side six students quoted speed of transmission, four that they had complete confidence in safe arrival, two that they relished the extra time available and one that the experience and control was an asset.

It is possible to hypothesise that the two students who disliked the prospect of sending long assignments by EMAIL had poorly developed keyboard skills. It is easy to assume that everybody has highly developed keyboard skills and to forget the long and frustrating grind word processing presents to such students. For such students hand writing is still the preferable way of presentation. Short of insisting all students pass a typing test, perhaps they should be given the option to submit long assignments in the manner they prefer.

Items 13-15 sought opinions as to whether students considered the speed, quantity and quality of feedback by EMAIL was better, the same or worse than that received by more conventional methods. The findings are presented as table 9.

	Speed	Quantity	Quality	Total
Better	13	7	7	27
The same	0	5	5	10
Worse	0	1	1	2
Total	13	13	13	39

Table 9 - Speed, quantity and quality of EMAIL feedback in comparison to conventional feedback

These results are compelling. Every student attested to the better return rate and all but one also felt the quantity and quality of comments was equal to or better than that received by conventional means. During a previous semester a marker who lived 40 km away was employed but this created no delays or problems.

Each time an assignment was received by the lecturer an immediate acknowledgement was sent. This involved a short stored message such as 'Your assignment 1 has been received'. This was sent to the student by return (REPLY) EMAIL allowing the student to know that all was well. The assignment was extracted from the EMAIL system and placed securely in a file in a protected (sub) directory of the lecturer's username. The above two actions each required one short command. Each student's assignment was placed into a file which contained in the filename the (VAX) username of the originating student for future return purposes. Periodically, the marker would sign onto the VAX and simply transfer all new assignments onto the hard disk of his micro. Then using his WP facilities, he would mark each assignment.

The marking process paralleled what would happen with the traditional pen on paper process. Function keys in the WP package were set to generate symbols such as ticks, crosses and question marks, which were quickly entered, where appropriate, into the student's submission. Where necessary, previously prepared 'standard comments' were inserted always being prefixed by a ## (2 of #) symbol, so that these comments could easily be found by the student using the search facility of their own WP once the marked assignment had been returned.

The marked assignments were then uploaded to the VAX ready for return to the students. The lecturer reviewed the assignments and formulated overall general comments for the class. The total mark for each student was extracted, and then sorted into descending order so as to provide each student with a clear indication of the overall result achieved by all the students. In this way students were able to compare their mark with the remainder of the cohort.

The general comments and marks distribution were sent to all students in the class via EMAIL Broadcast after which each student was sent back (via EMAIL again) their individual assignment, as marked.

The total turnaround time for the first assignment, from the date the assignment was due to the time it was returned by EMAIL and thus available for retrieval by the student, was six calendar days, which compares more than reasonably with the best to be expected by normal hard copy and postal procedures.

Advantages of the Approach

- Unless the students took a draft/final hard copy, no printing or paper consumption was necessary.
- Students were able to submit electronically right up to the due date deadline, thus allowing them several extra days to complete the assignment, since postal delay was not a concern.
- The potential inequity of different postal lead times between students in different locations was eliminated.
- Students were able to receive immediate (as at the next time they logged into the VAX) confirmation that their assignment had been received.
- An electronic copy of a student's assignment was held in their computer system, the lecturer's VAX files, and the marker's micro files. Consequently the assignment could not be lost in transit.
- The lecturer could easily maintain records and control over the entire procedure including when assignments arrived, which assignments were 'out' being marked, which assignments were available for return, marks achieved by the students.

The EMAIL system can be seen therefore to have a number of additional benefits apart from improved speed, quantity and quality of feedback.

Items 16-18 were designed to ascertain from students what improvements they would like to see in the application of EMAIL for the transfer of messages (item 16), the submission of assignments (item 17) and provision of feedback (item 18). Surprisingly few recommendations were forthcoming which must reflect the high level of satisfaction already felt.

With regard to the sending of messages, nine students either offered no suggestions for improvements or expressed complete satisfaction with the system as it currently operates. Four ideas were forthcoming from the remainder. One requested more instruction on how to send EMAIL messages, a second berated fellow students for not responding more quickly to messages. The former clearly needed some remediation initially to help him/her over difficulties. Little can be done to assist the latter except to again urge (by EMAIL?) students to check for and respond to messages as frequently as possible. A third student complained of delays of up to ten minutes in receiving mail messages. This was apparently due to the VAX at that time being unable to cope with the overall load and has since been rectified.

The fourth student suggested the addition of interactive chat mode whereby a conversation could be simulated between two stations. The DTA4114 lecturer when asked about this said that this possibility had been deliberately discouraged for several reasons.

. extra facilities are required on the microcomputers,
. it consumes more resources,
. this system cannot maintain records,
. not as 'personal' as the telephone,
. is intrusive in the same way as the telephone.

Nine of the thirteen students were perfectly happy with the current use of EMAIL for the forwarding of assignments. Two other students liked it so much they requested all assignments be submitted via EMAIL. The remaining two students were concerned about the slow rate of file transmission. One had purchased a modem capable of transmitting only 300 baud per second. This was the student's choice - the limitations in speed of transfer had been explained to the students at the residential school 12 months earlier. 2400 baud (bits per second) has recently become available and new students are now being advised of this enhanced capability. 1200 baud has been available since 1985.

Twelve of the thirteen students were satisfied with assignment feedback and offered no suggestions for improvement. The thirteenth expressed concern that in providing feedback it was a distressing experience for students with poor marks to have their marks made public to all other students. The lecturer explained, however, that this did not happen if students choose not to make their student numbers known to others. Students were warned of this at residential school but all agreed to exchange student numbers. In the interests of confidentiality student numbers need not be listed against assignment scores in future.

The questionnaire concluded with an 'open basket' item seeking any comments respondents felt had not been adequately covered in previous questions. Two pertinent remarks were offered apart from several highly complimentary comments about the lecturer and the use of EMAIL in the subject. The significance of so many compliments should not be dismissed lightly, reflecting as it does a group of satisfied customers. Both remarks requested extensions of EMAIL to include electronic Newsletters and items such as 'textbooks for sale' and the use of a bulletin board. The introduction of a bulletin board for all students studying the Graduate Diploma in Computer Applications is currently being implemented.

By way of summary of the product evaluation it can be said that, in general, both the lecturer and students were well pleased with the use of EMAIL in DTA4114. There was strong support for its continued use as a communication channel and as a method for the forwarding and return of assignments. The majority of students was in favour of extending EMAIL more comprehensively into other subjects in the program. A few suggestions for improving the use of EMAIL were forthcoming, the more practical of which have already been instigated.

Discussion

The CIPP evaluation model has been applied to examine the use of EMAIL for DTA4114 during Autumn Semester 1989. Data has been collected through a student questionnaire, lecturer interviews and information stored on the VAX and analysed using the four facets of the CIPP model namely context, input, process and product. There is no doubt that the three objectives described earlier justifying the introduction of EMAIL have been achieved. Students have had the opportunity to demonstrate their practical knowledge of EMAIL, communication between all parties has been far greater than when EMAIL is unavailable. The paperless assignment has been welcomed as being faster and safer and providing feedback to students which exceeds that of conventional feedback methods in speed, quantity and quality. Finally, the increased level of communication must be conceded as having reduced the degree of isolation experienced by students. It must be concluded that the use of EMAIL in this subject has been highly successful.

Recommendations

"Evaluation is not to provide but to improve" (Popham, W.J., 1975:78). In this final section attention will be given to the listing of recommendations for the further improvement of EMAIL as used in DTA4114 followed by some more general recommendations for the introduction of EMAIL into other subjects and courses offered by Charles Sturt University.

Recommendations arising from context evaluation

1. None. The context is well suited for EMAIL procedures.

Recommendations arising from input evaluation

1. Attention should be given to the most cost effective method for overseas students to link into the Telecom AUSTPAC system.

Recommendations arising from process evaluation

1. Further work be carried out to ascertain why a small group of four or five students did not use EMAIL for student-student contact.
2. Consideration be given to increasing the number of assignments submitted and returned electronically.
3. The system of using pre-prepared feedback comments be further refined and extended.
4. Care should be taken not to demand too many long assignments be presented electronically. This can be disadvantageous to students without well developed keyboard skills.

Recommendations arising from product evaluation

1. Consideration be given to increasing the use of EMAIL in other subjects offered in the Graduate Diploma in Computer Applications. It is only through greater practice with EMAIL that the small and less enthusiastic group of students (thought to exist in every cohort at present) will become more comfortable EMAIL practitioners.
2. Particular care be taken to inform students during the residential school of the threat to their confidentiality if they make known their student number to other students.
3. Consideration be given to the setting up of a bulletin board for all students enrolled in the graduate diploma.

Recommended Conditions for the Introduction of EMAIL into Other CSU Programs (i.e. non-computer subjects)

The number of external students who now have access to a personal computer is estimated to be around 70-80%. Those with a modem also may number only 5-10% (although typically modem costs of $100 to $400 now apply). Students may not take kindly to a lecturer who insists that students must use EMAIL unless they are studying a course that is about computing per se. However, if the following conditions are present, it would seem fair and feasible for subjects outside the area of computing to also expect students to equip themselves with the technology to partake in EMAIL.

Conditions

1. That the lecturer is totally committed to EMAIL and has a full understanding and willingness to make use of its potential. This means the lecturer must use EMAIL efficiently and effectively, checking messages in and responding daily as well as instigating the submission and return of one or more assignments each semester using EMAIL.

2. That all students be thoroughly trained in the use of EMAIL preferably at a residential school prior to the commencement of the semester during which they will use EMAIL.

3. That the print materials normally supplied to external students not be compromised because of EMAIL.

In the Future?

Although the survey and evaluation covered a relatively small cohort of students, this significant support for the use of EMAIL in Distance Education is very encouraging, and strongly suggests that further (and wider) use of the approach be undertaken.

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WORKERS COMPENSATION FOR DISTANCE EDUCATORS... A FEW PROBLEMS AND POSSIBLE SOLUTIONS

Brian C. Williamson

Introduction

Imagine two lecturers talking to each other about a third:

"Did you hear about Jill Robinson?"

"No, Why?"

"Well, whilst at Alice Springs last week, (she was there running a residential school, you know), she fell in the Main Street, broke her leg and is now in hospital !"

"How terrible! That will put a high financial strain upon her. I wonder if she's covered by Workers Compensation?"

This hypothetical conversation will one day occur, given the increasing adoption of distance education by Australian universities and the administratively sensible practice of sending lecturers to prearranged student centres for conferencing, supervision and residential schools. For example, at Charles Sturt University, lecturers have on many occasions travelled away to conduct residential schools and this will increase as the institution becomes more involved at national and international levels.

Aims

The aim of this paper is to consider the application of Workers Compensation legislation to the travelling lecturer, the lecturer working from a Work Centre or from home. A "Work Centre" is a body set up for research or educational activities, but outside the main framework of the University. In particular, the following questions are addressed:

1. Is a lecturer covered whilst providing courses away from the University? Does this cover extend to other centres where lectures or residential schools are given, work done for Work Centres or to overseas travel?

2. Is a lecturer covered whilst working from home?

3. Does coverage extend to times when the lecturer is working but not directly involved in teaching duties? Does cover extend to times when the lecturer is not working but is overseas on University or Work Centre business?

4. What are the lecturer's rights in the event of injury/death occurring in particular situations?

For the purposes of the paper, the law as it stands in New South Wales will be applied. Each state and territory's Workers Compensation Acts have similiar provisions so that the principles that are discussed here are generally relevant Australia wide.

History and Background

The first Workers Compensation Acts arose in Germany in the 1880s and spread to the United Kingdom by 1897. It followed that most Western industrialised nations adopted compensation legislation of one kind or another - United States 1911 and New South Wales in 1910.

The New South Wales 1910 Act was replaced in 1926. This later Act suffered countless amendments until its repeal in 1987. In that year, the then Labor Government of N.S.W. introduced a new compensation scheme, called "WorkCover". That Act has been amended a number of times already and is the main source of legislation for Workers Compensation in New South Wales.

The Workers Compensation Act, 1987 ("WorkCover")

Who is Covered?

WorkCover centres upon compensation for "workers" and "worker" as defined in Section 3:

> *"Any person who has entered into or works under a contract of service or apprenticeship with an employer, whether by way of manual labour, clerical work or otherwise and whether the contract is expressed or implied or is oral or in writing, ..."*

This definition reflects the common law relationship of "master and servant". (Today, the expression "master and servant" is interchangeable with "employer/employee"). If there is no such employment relationship between them, then WorkCover does not apply. It means that an Independent Contractor (i.e. a self employed person) would not be covered and would have to arrange his/her own injury insurance.

However, the definition section and schedule in the Act alter the common law boundaries of master and servant and Independent Contractor. For example, police, who are clearly "employees" are excluded (because they are covered under other legislation) as are many "casual" workers. Other types of arrangement are included in WorkCover, particularly attempts by some employers to contract out of a "master/servant" relationship by attempting to make contractual arrangements between the parties one of "independent contractors". Particular types of work are included, for instance, value of work exceeding $10 and particular types of rural work, mines work, jockeys and caddies. (Schedule One).

What then are the implications for a lecturer? Clearly, a lecturer is employed under a contract of employment with a University or College and is therefore in a "Master and Servant" relationship with the University. However difficulties arise when the work undertaken has been contracted out by a work centre or company wholly/partly owned by the university. For example, the Centre for Work and Labour Market Studies formed between Wollongong and Charles Sturt Universities. At law, these are separate legal entities, especially if they have been incorporated under Company's Act legislation.

Are lecturers still "employees" (of the new entity) or are they Independent Contractors working for themselves? The answer will depend upon the contract made by the parties but could easily leave the lecturer with no cover whatsoever. For example, does the Centre pay a salary for the work done (a symbol of employment) or does the lecturer render an account for the whole job undertaken (a symbol of an Independent Contractor)? Other subsidiary questions also arise which are outside the scope of this paper: Is a lecturer, working for a Centre or company also entitled to holiday pay, sick pay and termination pay?

Who is Liable?

Under the legislation, the person liable to pay compensation is the "employer" who is defined as including:

(a) any body of persons, corporate or unincorporate;

(b) the legal personal representative of a deceased employer;

(c) government employer; and

(d) a former employer.

By Section 6, the Act also binds the Crown. However, this does not apply to the payment of fines by the Crown for breaches of the Act.

Note that although the employer is primarily liable, it is the insurance companies who step in to pay compensation and act on the employer's behalf. If an employer does not obtain insurance, special provisions apply and the employer is also liable to certain fines (see Sections 155 to 164).

Clearly, a university is an employer within the definition of the Act but many Centres for Studies and companies set up for consultancy purposes do not regard themselves as employers but as mere co-ordinators. Lecturers are regarded as working for themselves, rendering fees for the work done and the organisations have no workers compensation insurance cover. At law it is possible to work for two employers at the one time, (or one employer and also work as an Independent Contractor) and the lecturer cannot rely on the Workers Compensation policy of one if the injury occurred during the period of employment with the other. Often, lecturers will undertake such work during holiday periods and will not be covered by the University.

Some assistance may be given to lecturers by Clause One of Schedule One of WorkCover, which states:

> *If the services of a worker are temporarily lent or let on hire to another person by the person with whom the worker has entered into a contract of service...the latter shall...be deemed to continue to be the employer while the worker is working for the other person.*

This provision implies that the University will remain the "Master" if the lecturer is lent or hired to the Work Centre. But how often will this occur? The University must be paid by the Centre, unless the lecturer is lent, and the University must continue to pay the lecturer. The provision is of no assistance to the lecturer paid by the Centre either as an "employee" or as an Independent Contractor.

What is covered?

By the terms of Section 9:

> *A worker who has received an injury (and, in the case of the death of the worker, his or her dependants) shall receive compensation from the worker's employer in accordance with this Act.*
>
> *Compensation is payable whether the injury was received by the worker at or away from the worker's place of employment.*

This section is the worker's basic entitlement to compensation. The lecturer would therefore be covered for injuries occurring during the course of off campus residential schools, whilst in consultation with students or visiting students for the purposes of supervision.

Injuries occurring at home and whilst in the performance of employment duties will also be covered. For example, while marking exam papers or conducting teleconferences with external students.

"Injury" includes: Personal injury arising from the course of employment, including diseases contracted by a worker in the course of employment and to which the employment was a contributing factor and the aggravation, acceleration, exacerbation or deterioration of any diseases.

This means that the lecturer would be covered for a disease contracted whilst on work time and for all the complications arising from that disease. For example a nursing lecturer, supervising students at a hospital who becomes infected with a disease. It would also cover the lecturer for an aggravation of an existing injury. For example, a worker forced to travel with a back or neck injury would be covered for its aggravation or exacerbation.

Indeed, one of the major difficulties for employers under WorkCover is the extension of the concept of "injury" to "aggravation, acceleration, exacerbation, or deterioration of injury". An employee who has suffered injury in the past and who sustains further injury, will be able to claim from the new employer. Accordingly, some employers are reluctant to allow partially disabled persons to work for them as they often believe that this worker may suffer a subsequent injury thereby increasing the employer's risk of further compensation claims and insurance premium. There is a fine line between an employer protecting itself from higher premiums and running foul of the federal and state Anti-Discrimination laws. This issue may become relevant if the lecturer works for the abovementioned companies or work centres and has pre-existing medical problems.

Journey Claims

The concept of "injury" is not dependent upon it occurring at the traditional place of employment. Commercial travellers have always been covered for car accidents as are workers attending other employer's premises for work purposes. As already mentioned, if a lecturer was injured whilst giving a residential school in Brisbane, s/he would be covered. But, coverage would also extend to the travel between centres where lectures or residential schools will be given and to overseas travel as well, such as to Hong Kong or Singapore.

There is an extension to this coverage in order to include such matters as injuries in journeying to and from work, the so-called "journey claims".

Particular provisions now apply and these are set forth in Section 10 of the Act and basically state, as follows:

> *(1) A personal injury received by a worker on any journey...is...an injury arising out of the course of employment....*
>
> *(2) Sub-section (1) does not apply if:*
>
> *(a) the injury was received during or after <u>any interruption of, or deviation from</u>, any such journey; and*

(b) the interruption or deviation was made for <u>any reason unconnected</u> with the workers employment or the purpose of the journey,

<u>unless</u>, in the circumstances of the case, <u>the risk of injury was not materially increased</u> because of the interruption or journey.

(Underscoring by author)

Upon this basis, the lecturer would be covered for travel between the hotel where he or she had stayed the previous night and for return to those premises the following night. However great difficulties arise in the following instances:

(1) An interruption or deviation from the most direct route to and from home will often render the remainder of the journey uncovered by compensation. For example: deviations for shopping or socialising even just for a short time.

(2) A travelling lecturer may decide to do some sight seeing before returning to the hotel. All injuries occurring after the deviation are uncovered.

(3) All travel and other activities undertaken by the lecturer after return to the hotel will not be covered under this principle as the journey has ended. So injuries during subsequent shopping or sight seeing expeditions are uncovered.

(4) Less clear, are subsequent journeys for meals or for such matters as laundry or purchasing of papers or writing materials. These are private matters but arising purely from the lecturer being absent from home.

(5) Curiously, if the lecturer was injured at the hotel or during air flights, he/she would be covered as these are in the course of the University's business.

The issues raised above are compounded by the reality that overseas travel and new environments create inherent dangers for the lecturer because of lack of familiarity with the locale. Some places may be more dangerous, such as China. Some countries also have very expensive medical systems and the cost of injury will be high on this basis also.

In New South Wales, the present Liberal Government has sought to further restrict journey claims due to fraudulent claims and other abuses within this area. After all, it is easy to argue that a football injury occurring on a Sunday afternoon was occasioned by falling over on the way to work and that compensation should be paid.

The union movement was better prepared in 1989 than in 1987 and has fought these amendments, resulting in an undertaking by the Minister for Industrial Relations that the 1989 amendments, dealing with restricted journey claims, would not be brought into effect, if the remainder of the amending legislation was allowed to pass through the Legislative Council without major alteration. This abandoned schedule of the Amendment Act has been called "the silent schedule". The Minister has forecast a further Amendment Act in 1990 dealing specifically with journey claims.

The implications for the lecturer are profound. All journeys to and from home, hotels and possibly aircraft journeys may be uncovered. Only time in actual employment may be covered.

Authorised Recesses

By section 11, ordinary and authorised recesses are covered, where the worker does not expose him/herself to abnormal risk of injury. If the worker is absent without permission, then the break is not covered.

This section raises interesting possibilities. If a lecturer obtains permission to sightsee and do shopping, as described above, will the lecturer now be covered during that now "authorised recess"? Whilst there is some argument that this is possible, the author believes that the insurance company would deny liability and the matter would have to be fought in the Court. The onus of proof will be upon the lecturer.

Possible Safeguards

The above represents some of the pitfalls for the travelling lecturer. To ensure maximum cover for compensation, the lecturer should:

(1) Check who is the "employer" for the period of the journey and if the employer is a Work Centre, ensure that the lecturer is regarded as an "employee" and not an "Independent Contractor".

(2) Ensure that all sightseeing and other journeys are "authorised" for the purposes of the Act by getting written permission from the University or Work Centre to sightsee.

(3) Ensure that all "deviations" on journeys are not "substantial" and do not add to the "risk of injury" or if they are, they are covered as in (2) above.

(4) If the work done is on a consultancy basis (i.e. as an Independent Contractor) take out the appropriate insurance cover and include its cost in the fees charged.

Conclusion

The Workers Compensation Act in New South Wales is undergoing annual change and the Minister has speculated that journey claims will be restricted in the near future. Given the difficulties that lecturers face whilst travelling, the matter should be dealt with directly by the University, the Work Centre and by the Lecturers' Unions, so that all parties are aware of their rights and duties and the same can be reduced to writing.

In particular, the restriction of "journey claims" by the state government should be fought, and the issue of total coverage for travelling lecturers from the time they leave home until they return should be addressed.

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DATA COMMUNICATIONS AND DISTANCE EDUCATION

Robert Moore

When using data communications technology in distance education, it is important that teachers and administrators have a clear understanding of the reasons for using it, particularly those concerning the distant learner.

To gain insight into those reasons, some of the well known distance education theories are introduced. Then, in the light of these theories, common data communication technologies currently being used or likely to be used in the future in distance education are examined.

Introduction

Distance education is a relatively new discipline practiced by many (lecturers and others) with little formal training in education in general and distance education in particular. As a result, there is little in the way of underpinning learning/teaching theory in distance education and what is recorded is not widely known by many people involved in distance education.

Likewise communications technology, a relatively recent development, is gaining widespread acceptance and is often introduced with little effort spent on justifying or assessing its effectiveness or use for distance education.

This paper discusses communications technology in distance education in conjunction with one of the better known distance learning/teaching theories, Holmberg's Guided Didactic Conversation Model. It attempts to show that this theory can provide some guidance in evaluating and assessing the introduction of new technology into distance education.

The thoughts and ideas that follow are from the point of view of a college of advanced education lecturer based on:

- teaching introductory and advanced computing subjects externally
- teaching in an external only graduate diploma in computing course where the primary means of communication is through AUSTPAC.

From the point of view of a lecturer teaching in a technical area, Holmberg's Model seems appropriate. A brief description of this theory makes up the first part of this paper. Then, communications technology is related to Holmberg's theory, particularly where and how communications technology fits into his theory and what it adds to it. The Riverina-Murray Institute of Higher Education (RMIHE) experience with AUSTPAC is then used as an example.

In distance education in particular there is no such thing as a 'typical' student. The last section of the paper discusses this point in the light of communications technology and Holmberg's Model.

Distance Education Theory

The main theoretical writers on distance education can be grouped into two categories as follows:

- those who emphasise independence, autonomy and individualisation (e.g. Wedemeyer 1977 and Moore 1973)
- those who emphasise communications and interaction (e.g. Holmberg, 1982, 1983, Stewart 1976).

Of these theories the one that has the greatest intuitive appeal (to the author at least) is Holmberg's Guided Didactic Conversation Model.

The guidance refers to the direction given to external students through external notes, written correspondence, telephone conversation and personal contact.

To quote the Webster's dictionary, the word 'didactic' means:

> a: fitted or intended to teach, b: intended to convey instruction and information as well as pleasure and entertainment.

According to Holmberg's theory, distance education is individual learning through self-study, where students benefit from:

- having a subject developed for them
- the interaction between lecturers, tutors and other members of a supporting organisation (e.g. librarians, administrators, liaison officers etc.).

It is the relationship between the student and the supporting organisation that Holmberg characterises as guided didactic conversation.

Holmberg (1983) gives seven bases for his theory which he presents as follows:

1. that feelings of personal relation between the teaching and learning parties promote study pleasure and motivation
2. that such feelings can be fostered by well developed self-instructional material and suitable two-way conversation at a distance
3. that intellectual pleasure and study motivation are favourable to the attainment of study goals and the use of proper study processes and methods
4. that the atmosphere, language and conventions of friendly conversation favour feelings of personal relation
5. that messages given and received in conversational forms are comparatively easily understood and remembered
6. that the conversation concept can be successfully translated for use by the media available to distance education
7. that planning and guiding the work, whether provided by the teaching organisation or the student, are necessary for organised study, which is characterised by explicit or implicit goal conceptions.

The practice of this theory is seen in external notes which:

- use a reasonably colloquial or conversational style
- use personal pronouns like 'you', 'I' and 'we'
- structure contents both verbally and typographically, and avoid compactness.

Figure 1 provides a diagrammatical representation of this model.

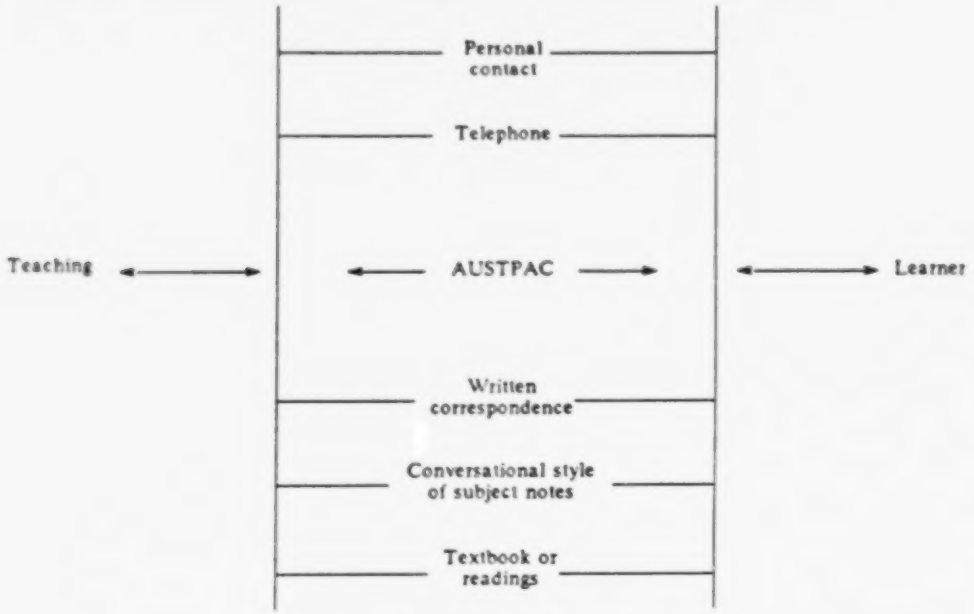

Figure 1: AUSTPAC in Holmberg's Model

The methods for didactic conversation between the teacher and learner in Figure 1 are ordered by the extent to which the learner can communicate with the teacher.

Using this theory those involved in the teaching of distance education should assess the teaching methods and media they use by the extent to which they promote or facilitate guided didactic conversation.

Likewise, for the purposes of this paper, it is argued that the introduction of, or assessment of, a new communications technology should be justified or judged on the extent to which it increases, aids or promotes guided didactic conversation. The extent to which it is used and how much we are prepared to spend on the technology should be determined by how much it contributes to study pleasure and motivation.

Communications Technology and Distance Education

Using Holmberg's Model as represented in Figure 1, communications technology simply becomes another link between the teacher and the learner. In examining its role in distance education we should be looking at it in terms of how much it contributes to study pleasure and motivation. The use of AUSTPAC in the Graduate Diploma in Computer Applications offered at RMIHE is used as an example here. AUSTPAC is added as another link between teacher and learner in Figure 1.

In the next section the use of AUSTPAC in teaching at RMIHE is discussed, with this experience related back to Holmberg's theory in order to assess its effectiveness.

AUSTPAC at RMIHE

How the System Works

When students enroll in the course, they first come to a compulsory residential school where, among other things, they are given intensive instruction in data communications (linking a microcomputer to the RMIHE system) and the use of electronic mail on RMIHE's VAX computers. For the duration of the course, apart from notes sent out for each subject in which they are enrolled, electronic mail will be the students' primary means of communication with their lecturers.

Students in the course are given an amount of free connect time at the beginning of each semester as follows:

1st semester - 20 hours
2nd semester - 10 hours
3rd semester - 5 hours
4th semester - 5 hours

This averages out to five hours connect time/subject over the course. The early subjects, by their nature, require large amounts of connect time whereas the later subjects require substantially less.

If students exceed their free allocation they are (currently) charged $8.00 per connect hour for any additional time. For all but a few students the free time allocated is sufficient for the semester.

When students dial in through one of the five AUSTPAC lines RMIHE rents from Telecom, they are checked against a list of valid users. If they are on the list and have a positive balance in their connect time available, they get into the system. Otherwise they are given an appropriate message and barred from proceeding.

The time they are connected through AUSTPAC is taken from the VAX accounting file which records statistics on every session. Each evening (when the clock strikes 12) the connect time available for any user who has come in through AUSTPAC that day is decremented.

Students see how much AUSTPAC time they have available as part of the login banner which is displayed at the beginning of each session.

Apart from electronic mail, the system is also used to submit assignments, receive feedback on them and to conduct on-line testing. Some assignments are marked automatically and in some cases the marks obtained are automatically entered into a spreadsheet. At the same time the results are sent by electronic mail to the student.

For the programming subjects the assignments are developed and implemented on the student's own computer. When complete the program is uploaded to the VAX then copies to a class account where it is later printed out, marked and surface mailed back to the student.

AUSTPAC Usage and Cost

Table 1: RMIHE AUSTPAC usage statistics, Autumn 1988

March	April	May	June	
Total connect time (hrs)	285	217	163	132
Off-peak (hrs)	203	160	110	95
Peak (hrs)	82	57	53	37
Number of users	72	70	69	69
Number of sessions	1375	1011	984	806
Ave session length (min)	12	13	10	10
Ave connect time/user (min)	237	186	142	115
Max connect time	1539	1050	947	1238
Ave number of sessions	19	14	14	12
Max number of sessions	108	70	49	53
Fixed rental cost ($)	300	300	300	300
Usage cost ($)	1136	792	N/A	N/A
Total cost	1436	1092	N/A	N/A

Based on the figures in Table 1, AUSTPAC charges to RMIHE this year will be in the order of $11000 for rental and usage related charges. We will use approximately 1800 connect hours at a ratio of 2.5 to 1 between offpeak and peak time usage.

In summary, AUSTPAC is a relatively inexpensive technology, reasonably secure and easy to manage.

Electronic Mail

A rough guideline for electronic mail usage would be ten messages per student per semester subject. This figure is very misleading however as there are typically a number of students who never send a message at all and others who would average three or four a week.

Another interesting statistic is that 80 to 90% of electronic mail queries can be answered in less than one or two paragraphs or four or five sentences. Some queries will only require a yes or no type of answer while a number are simply acknowledgement or thank you messages which require no response at all.

A lot of the queries are very satisfying as they are questions that would not be asked unless the student had an inexpensive and easy vehicle like electronic mail. The student would have either spent more time on the question or just given up.

AUSTPAC and Holmberg's Model

In light of RMIHE experience with AUSTPAC as it relates to Holmberg's Model we would expect a significant improvement in learning (better performance by students, higher retention rates) than would have been the case if the course was offered without it.

AUSTPAC impinges on two of the bases underpinning Holmberg's theory. First it is effective in developing "feelings of personal relation between the teacher and learner". Conversations both didactic and personal are easy and inexpensive. A large portion of the students are able to establish some feeling of personal relationship with the lecturer (and vice versa) through electronic mail. This makes for a high degree of teacher and learner satisfaction, study pleasure and motivation.

Secondly, the lecturer can assess by queries received where the notes or assignments (assignments tend to be the source of most queries) are deficient or misleading, take immediate remedial action and get it out to the whole class. This complements the second basis of Holmberg's theory by improving the hardcopy self-instructional material.

Additional Benefits

Communications technology (AUSTPAC in this case) adds another dimension to distance education in that some of the technologies enable students to communicate with one another. Electronic study groups are quite common in RMIHE's Graduate Diploma. One of the more prominent groups this past year has been one with members in Lismore, Tamworth, Geelong, Canberra and Sydney. The five students involved were in regular contact producing mutual support, study pleasure and motivation.

In addition, global mail messages enable students to be more aware of how they are doing relative to the rest of the class. It is common to mail out mark distributions to the class after all assignments or exams have been marked.

Electronic bulletin boards are another technology that has some potential in this regard. Students are able to ask questions and receive responses from anybody else with access to the bulletin board who cares to respond. This again facilitates communication and breaks down the feeling of isolation inherent in distant education.

In other words with the appropriate technology a student need only be distant in body. Electronic mail and bulletin boards make it possible to communicate, easily and inexpensively, not only with lecturers, but with classmates as well.

Limitations

Having painted the glowing picture of the effectiveness of AUSTPAC one wonders why we need the various links shown in Figure 1. Could they not all be replaced by communications technology?

There are a few problems.

Our experience has been that there are teething problems with a number of the students who commence the course in that they have trouble getting their modems, communications software and computer sorted out to enable them to talk to the VAX host computer. Although this problem is gradually improving with improvements in hardware and software, it is still the source of some frustration and time wastage for the students concerned. Some never get the problem resolved and withdraw from the course while others get so far behind they cannot catch up.

A related problem is that the students are virtually dependent on the continual smooth operation of their equipment. Hardware failures can be disastrous.

The second problem is that doing anything of significant size at 300 baud is painstakingly slow. Too many long documents sent electronically means students either do not print them or, much to their consternation, quickly exhaust their connect time allocation if they do.

The same applies in setting assignments that have large amounts of text that must be uploaded to, or downloaded from the host computer.

Another shortcoming is the inability to send graphics. This makes some concepts that with the aid of a diagram would be very effective, quick and easy to explain, very difficult, time consuming and ineffective.

The Problem with Theory and Technology

There is a problem in applying distance education theory to external students. The problem is that the wide diversity of student makes it difficult to identify a 'typical' student or to apply the theory generally to all external students. This diversity also makes it difficult to generalise on the best teaching method or media for external students in general or for that matter, even students enrolled in a particular course.

This point and its ramifications is made clearly by Smith (1979, p.58) where he states:

> External students generally reflect great diversity in educational experience, inherent ability, motivation and self confidence. Consequently a variety of teaching methods and media should be used to allow students to develop the learning pattern best suited to their individual needs and capabilities.

This raises two points:

1. It is unlikely that new communications technology or new teaching methods or media will replace existing ones.
2. When seeking to justify new technology in distance education, say for example a particular course, it should be recognised that the new technology may only affect a portion of the student population. It cannot be justified on the basis that it will affect all students in the class.

In distance education we have to cater for a variety of students. As educators we have to be aware that, particularly with mature age students, what motivates or stimulates some will not do the same for others.

As distance educators we have a variety of tools available to us including residential schools, printed materials, cassette tapes, teleconferencing, telephone and communications technology like electronic mail, bulletin boards, VIATEL and so on. We should be prepared to use them all where appropriate and not use one of these tools at the expense of another.

RMIHE's experience with AUSTPAC has been that despite our enthusiasm and its obvious benefits there are still a number of students who choose to use it very sparingly if at all - but still proceed quite satisfactorily. Some students do not use their notes or study guides preferring presumably to work it out themselves with the aid of textbooks, or other outside help.

On the other hand some students phone when they are having problems; some students phone just to say they are doing all right (or not doing all right). Some students travel some distance to RMIHE feeling that face-to-face instruction is the most effective way they can be helped.

The conclusion from this, which collaborates Smith's statement is that although we have a very powerful, easy to use tool in electronic mail, some students choose to use it much less than others, while other students look to other media to assist their studies.

Some lecturers when presented with a subject where electronic mail is available think their days of phoning a student to sort out a problem are over (this concluded from first hand experience). However one soon learns that there are

some questions, some students and some situations where a phone call is cheaper, quicker, and more effective than a mail message. There are some students, particularly poorer students or students whose native tongue is not English, where a phone call is often more effective. Often the question asked indicates that the student has much deeper problems with the subject area. Quite often in this case a phone call is cheaper and more effective than a mail message.

Students who are late with assignments but are communicating are prime candidates for a phone call as this indicates they are having trouble, losing interest or both. So despite all the advantages of AUSTPAC there is still an important place for the humble telephone in RMIHE's Graduate Diploma course.

Conclusion

In introducing communications technology in distance education it is helpful to have some underpinning teaching/learning theory to help assess and evaluate its effectiveness. In this paper, this is illustrated using Holmberg's Guided Didactic Conversation Model and RMIHE's AUSTPAC based Graduate Diploma in Computer Applications.

There is a wide diversity in external students in terms of factors that affect performance in distance study. For this reason, as we seek to introduce new communications technology into distance education, we should:

- keep in mind that although the success of some students will depend on it, for others it will play little part in their study
- not throw out existing teaching methods and media (communications technology should be looked on as another tool or a complementary tool but not a replacement tool)
- be aware that in justifying new technology the benefits of that technology will not apply to all students to which it is made available.

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David Roberts
Co-editor
Occasional Papers
Division of External Studies
Charles Sturt University-Riverina
PO Box 588
WAGGA WAGGA NSW 2650

Enquiries please ring **(069) 22 2568.**

OR

David Meacham
Co-editor
Occasional Papers
Distance Education Resource Centre
Charles Sturt University-Mitchell
Panorama Road
BATHURST NSW 2795

Enquiries please ring **(063) 31 1022.**